seen, the first cavities **614** can be arranged in a pattern, for example a regular or repeating pattern of first cavities **614**. In some embodiments, the pattern can include a close-packed pattern of substantially spherical first cavities **614**, for example a hexagonal close-packed pattern of substantially spherical first cavities **614**. As used herein, a hexagonal close-packed pattern is intended to be understood as a structure that substantially corresponds to a layer of spheres or portions of spheres packed so that spheres or portions of spheres in alternating layers overlie one another, aligned in the gaps of the preceding layers. As described above, the present system can not only overlie one another, but can interfere or overlap the adjacent spheres. A traditional packing factor for hexagonal close packed systems is typically 0.74, though it can be higher in the present system due to the overlapping or interference pattern created. According to one example, the close packed pattern is established by repeating and propagating the base pattern detailed in FIG. **10**F throughout the structure, in various patterns or geometric arrangements, to form the aggregate three-dimensional structure.

FIG. **13** illustrates a top view of the second surface **606** of the body **602**, which in this example, opposes the first surface **604**. In some embodiments, one or more second cavities **616** can be extending into the body from the second surface **606**. The second cavities **616** can have substantially the same size and shape as one another, although in some embodiments the second cavities **616** can vary in size and shape from one another. The second cavities **616** can have a substantially spherical or hemispherical shape, such that the negative space of a cavity **616** can have a shape of a portion or region of a sphere. In some other embodiments, however, the second cavities **616** can have any shape. As can be seen, the second cavities **616** can be arranged in a pattern, for example a regular or repeating pattern of second cavities **616**. In some embodiments, the pattern can include a close-packed pattern of substantially spherical or hemispherical second cavities **616**, for example a hexagonal close-packed pattern of substantially spherical second cavities **616**.

In some embodiments, the pattern of second cavities **616** extending into the body from the second surface **606** can be substantially similar to the pattern of first cavities **614** extending into the body from the first surface **604**. In some other embodiments, however, the patterns of first and second first cavities **614**, **616** can be different. In some embodiments, and as illustrated in the section view of the three-dimensional structure **600** shown in FIG. **10**, the pattern of first cavities **614** and the pattern of second cavities **616** can be substantially similar but can be laterally offset or displaced from one another.

As further illustrated in FIG. **14**, at least one first cavity **614** extending into the body from the first surface **604** can intersect or interfere with at least one second cavity **616** extending into the body from the second surface **606**. In some embodiments, one or more first cavities **614** can intersect with one or more second cavities **616**. Further, one or more first cavities **614** can intersect with different numbers of second cavities **616**. For example, in some embodiments, an amount of the first cavities **614** can each intersect with three second cavities **616** while an amount of different first cavities **614**, for example those first cavities **614** positioned near a periphery of the body **602**, can each intersect with two second cavities **616**.

Similarly, in some embodiments, one or more second cavities **616** can intersect with one or more first cavities **614**. Further, one or more second cavities **616** can intersect with different numbers of first cavities **614**. For example, in some embodiments, an amount of the second cavities **616** can each intersect with three first cavities **614** while an amount of different second cavities **616**, for example those second cavities **616** positioned near a periphery of the body **602**, can each intersect with two first cavities **614**.

Together, the intersecting first cavities **614** and second cavities **616** form or define the three-dimensional pattern of apertures **608** extending through the body **602**. In some embodiments, at least some of the apertures **608** of the three-dimensional pattern can be in fluid communication with one another to form or define a matrix of continuous passageways in the body **602**. In some embodiments, this matrix of passageways can extend substantially throughout the entire body **602** such that any one cavity can be in fluid communication with any other cavity via the passageways. Additionally, the three-dimensional pattern of apertures **608** maintains a structural lattice of the material forming the body **602**. This resultant lattice structure provides thermal benefits in that there is an increased surface area for the transmission and release of thermal energy via convection as compared to traditional patterns, while providing passageways for convective transfer of thermal energy. Additionally, the interconnected lattice structure provides structural support for the body **602**. Further details of how the three-dimensional pattern of apertures **608** can be incorporated into an electronic device will be provided below with reference to FIG. **15**.

FIG. **15** shows a sectional view of an electronic device **700**, such as a display, including a housing **701** that is formed from a three-dimensional structure **702** as described herein. The three-dimensional structure **702** can be substantially similar to the portion of three-dimensional structure **600** described with respect to FIGS. **11-14**. That is, in some embodiments, the three-dimensional structure can include a body **703** including a first surface **704** and a second surface **706** opposing the first surface **704**. In some embodiments, the first and second surfaces **704**, **706** can be generally rectangular, although the surface can be any other shape. The body can include a pattern of first cavities **714** extending into the body from the first surface **704** and a pattern of second cavities **716** extending into the body from the second surface **706**. One or more of the first cavities **714** can intersect with one or more of the second cavities **716** to form or define a three-dimensional pattern of apertures **708**, such as a three-dimensional matrix of continuous passageways

In some embodiments, the body **703** can include additional structure or features. For example, as shown in FIG. **15**, the body **703** can include a flange **720** that extends away from a surface of the body **703**, such as the first surface **704**. Together, the flange **720** and the first surface **704** can define an internal volume of the electronic device **700**. The flange **720** can include one or more mounting surfaces for components of the electronic device. In some embodiments, the flange **720** can include a mounting surface **722** that can receive a display **730**. The electronic device can further include a cover **731** that can define a front exterior surface of the electronic device **700** and that, together with the housing **701**, can substantially define the exterior surface of the device **700**. In some embodiments, other components, such as LEDs and their associated controllers **740** can be disposed within the internal volume of the device **700**.

In some embodiments, the electronic device **700** can also include one or more thermal spreaders **750** disposed near, substantially adjacent to, or in contact with the body **703**. The thermal spreaders **750** can also be disposed substantially near, adjacent to, or in contact with one or more components of the device **700**, such as the LEDs and controllers **740**. For